

What is claimed is:

- 1 1. A method for biasing a body of a transistor, the method comprising:  
2 detecting a voltage applied to a terminal of a transistor; and  
3 coupling a biasing voltage to the body based upon the detected voltage.
- 1 2. The method of claim 1, wherein coupling a biasing voltage further comprises, when a  
2 gate of the transistor is driven high, applying to the body substantially the voltage applied to the  
3 terminal of the transistor.
- 1 3. The method of claim 1, wherein coupling a biasing voltage further comprises, when  
2 a gate of the transistor is driven low, applying a first voltage lower than the voltage applied to the  
3 terminal of the transistor.
- 1 4. The method of claim 3, wherein the first voltage is lower than the voltage applied to the  
2 terminal of the transistor and but not less than the voltage applied to the terminal of the  
3 transistor minus a voltage drop across a parasitic diode in the body of the transistor when the  
4 transistor is in an active mode.
- 1 5. A circuit, comprising:  
2 a transistor having a first terminal and a body;

3 a voltage detector that is to detect a terminal voltage that is to be applied to the first  
4 terminal of the transistor and that is to apply a bias voltage to the body of the transistor based  
5 upon the detected terminal voltage.

1 6. The circuit of claim 5, wherein the bias voltage is substantially equal to the terminal  
2 voltage.

1 7. The circuit of claim 5, wherein the bias voltage is less than the terminal voltage but not  
2 less than the terminal voltage minus a voltage drop across a parasitic diode in the body of the  
3 transistor when the transistor is in active mode.

1 8. A semiconductor circuit, comprising:  
2 a power supply node that is to provide a supply voltage;  
3 at least one field effect transistor having a source, a body, and a gate electrically coupled  
4 in a direct current manner to the body; and  
5 the source coupled to the power supply node

1 9. The circuit of claim 1, wherein the at least one field effect transistor is at least one p-  
2 channel field effect transistor (PFET transistor) and the body is an n-type body.

1 10. The circuit of claim 9, wherein the at least one PFET transistor has a tap coupled to the n-  
2 type body and the gate is coupled to the n-type body through the tap.

- 1 11. The circuit of claim 9, wherein the tap is n+ type material.
- 1 12. The circuit of claim 9, wherein the gate is electrically coupled through a first inverter and  
2 a second inverter to the n-type body.
- 1 13. The circuit of claim 12, wherein the at least one PFET transistor has a drain, and an  
2 electrostatic discharge impulse that is to be received at the drain is to pass through the body of  
3 the second inverter.
- 1 14. The circuit of claim 9, wherein the at least one PFET transistor is to be forward body  
2 biased when the gate is driven low.
- 1 15. The circuit of claim 9, wherein the at least one PFET transistor is to be reverse body  
2 biased when the gate is driven high.
- 1 16. The circuit of claim 9, wherein a threshold voltage of the at least one PFET transistor is  
2 to be lowered when the gate is driven by a first voltage.
- 1 17. The circuit of claim 9, wherein a threshold voltage of the at least one PFET transistor is  
2 to be increased when the gate is driven by a second voltage.

1 18. A semiconductor circuit, comprising:  
2 a power supply node that is to provide a supply voltage;  
3 a first current source;  
4 at least one field effect transistor having a source, a body coupled to the first current  
5 source;  
6 and the source coupled to the power supply node.

1 19. The circuit of claim 18, wherein the at least one field effect transistor is at least one p-  
2 channel field effect transistor (PFET transistor) and the body is an n-type body.  
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4 20. The circuit of claim 19, wherein the at least one PFET transistor has a gate, and the first  
5 current source biases the n-type body when the gate is driven.

1 21. The circuit of claim 19, wherein the at least one PFET transistor has a gate, and the first  
2 current source forward biases the n-type body when the gate is driven low.

1 22. The circuit of claim 19, wherein the at least one PFET transistor has a gate, and the first  
2 current source couples the n-type body to the power supply node when the gate is driven high

1 23. The circuit of claim 19, wherein the at least one PFET transistor has a gate and a drain,  
2 and an electric static discharge received at the drain is isolated from the gate.

1 24. The circuit of claim 19, wherein the first current source is to lower a threshold voltage of  
2 the at least one PFET transistor when the n-type body is driven by a first voltage.

1 25. The circuit of claim 19, wherein the first current source is to increase a threshold voltage  
2 of the at least one PFET transistor when the n-type body is driven by a second voltage.

1 26. The circuit of claim 19, wherein the at least one PFET transistor has a tap coupled to the  
2 n-type body, and the first current source is coupled to the n-type body through the tap.

1 27. The circuit of claim 26, wherein the tap is n+ type material.

1 28. The circuit of claim 19, wherein the first current source is a current mirror having  
2 a first transistor and a second transistor.

1 29. The circuit claim 28, wherein the first transistor has a first width that is larger than a  
2 second width of the second transistor.

1 30. A method for biasing a body of a transistor, the method comprising:  
2 selecting one of two voltages to be applied to a terminal of a transistor; and  
3 coupling a biasing voltage to the body based upon the selected voltage.